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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/665,880

09/19/2003

Alexander Gidon

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GLENN PATENT GROUP  
3475 EDISON WAY, SUITE L  
MENLO PARK, CA 94025

EXAMINER

DINH, PAUL

ART UNIT

PAPER NUMBER

2825

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/665,880	<b>Applicant(s)</b> GIDON ET AL.	
	<b>Examiner</b> Paul Dinh	<b>Art Unit</b> 2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 4,5,7-12 and 19-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4,5,7-12 and 19-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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### **DETAILED ACTION**

This is a response to the amendment and remarks filed on 10/27/08.

Claims 4-5, 7-12 and new claims 19-23 are pending.

### **Specification**

The specification is objected because:

“an infinitesimal period” in claims 4, 20- 21, and 23 is not described in the disclosure; “computer readable storage medium”, “first program”, “second program”, “computer”, digital storage" and ‘digital processor’ in claims 21-23 are not described in the disclosure.

See 37 CFR 1.75 (d).

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Claims 21-23 recite “computer readable storage medium”, “first program”, “second program”, “computer”, digital storage" and ‘digital processor’; therefore, these features must be clearly shown/labeled in the drawings or these features canceled from the claims.

**NO NEW MATTER SHOULD BE ENTERED.**

### **Claim Objections**

Claim 20 is objected to for being similar to claim 4 and thus considered a redundant and/or an unnecessary duplicate version of claim 4.

### ***Claim Rejections - 35 USC § 112***

*The following is a quotation of the first paragraph of 35 U.S.C. 112:*

*The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.*

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Claims 4-5, 7-12 and new claims 19-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 21-22 are rejected because the limitation “A computer readable storage medium containing a first program or a second program or both first and second programs, the first program executable to perform operations to generate timing constraints, the second executable to install the first program on a computer” in claims 21-22 is not supported by the disclosure.

Claim 4, 20- 21 and 23 are rejected because “an infinitesimal period” in claims 4, 20- 21, and 23 is not support by the disclosure.

Claims 21-23 are rejected because “computer readable storage medium”, “first program”, “second program”, “computer”, digital storage" and ‘digital processor” in claims 21-23 are not supported by the disclosure.

*The following is a quotation of the second paragraph of 35 U.S.C. 112:*

*The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.*

Claims 4-5, 7-9, 12, 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 20-21 and 23 are rejected because “an infinitesimal period” in claims 4, 20- 21, and 23 is neither defined in claims 4, 20- 21, and 23 nor described in the disclosure; therefor it is unclear as to what the applicant meant by infinitesimal period.

### ***Claim Rejections - 35 USC § 103***

*The following is a quotation of 35 U.S.C. 103(a), which forms the basis for all obviousness rejections, set forth in this Office action:*

*(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter*

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*sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.*

Claims 4-5, 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Selvidge (US Patent 5649176) in view of one or more of: McElvain (US P 20070288871), Duggirala (US Patent 6766501), and Cooke (US pub. 20060230369)

Selvidge discloses:

(Claims 4 and similarly recited claims 10, 20-21, 23)

Replacing flip-flops in a digital circuit with negative delay elements (col 5 line 24+);

Breaking any feedback paths in the digital circuit by inserting dummy flip-flops (fig 16) clocked by clocks all having an infinitesimal period (insofar the limitation infinitesimal period is understood)

Thus, Selvidge discloses substantially all the elements in claims 4, 10, 20-21, 23 except HDL

McElvain discloses HDL in par 3, Duggirala discloses HDL in col 6, and Cooke discloses HDL in par 39.

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize HDL simply because one or more of the following reasons:

HDL is a standard language developed to describe digital circuits to aide in the design and simulation of complex digital circuits (McElvain par 3)

HDL is well-known in logic/digital design/procedures (Hakewill col 6)

HDL is conventional in logic/digital design (Cooke par 39)

(Claims 5, 7-9) buffers having a delay -T, where T is a delay equal to a FF clock period less a predetermined FF delay (fig 14-15), avoiding breaking feed forward path (fig 16); predetermined optimization goals at each gate are substantially the same as they would be if registers were already optimally distributed (i.e., fig 8, 3-5, 12), T set to clock period of a FF being replaced (fig14-15).

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Claim 22 is rejected under 35 U.S.C. 112, first paragraph as detailed above.

***Allowable Subject Matter***

Claim 11 is allowed.

Claims 12 and 19 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

**Correspondence Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Dinh whose telephone number is 571-272-1890. If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, Jack Chiang can be reached on 571-272-7483. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Paul Dinh/

Primary Examiner, Art Unit 2825